

## ABSTRACT OF THE DISCLOSURE

In optical transmission of a radio-frequency signal such as a microwave signal and millimeter-wave signal, a radio-frequency circuit for distortion compensation results in complex adjustment and very expensive. For betterment, the radio-frequency transmitter with the function of distortion compensation of the present invention takes the following structure.

10 An electrical signal is branched into two by a branch part, and one of the resulting electrical signals is converted into an optical signal by a first optical transmission part. The optical signal is then branched into two by a first coupler. One of the resulting optical signals is converted into an electrical signal in a first optical-electrical conversion part. Based on this electrical signal and the other of the electrical signals branched by the branch part, a distortion component is extracted as a differential component. In a second optical transmission part, the distortion component is then inverted in phase, and then  
15 converted into an optical signal. A delay part delays the other of the optical signals branched by the first coupler by a predetermined length of time, and the delayed optical signal is coupled with the optical signal outputted from the second optical transmission part in a second coupler.  
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